

REMARKS

In the Office Action dated June 30, 2004, claim 2 was objected to due to an informality regarding the use of the word "was." Claim 2 has been corrected. Claims 1-3, 7, 9-10 and 27 were rejected under 35 U.S.C. §103(a) as unpatentable over Empedocles et al., U.S. Patent Application Publication No. 20020031783 in view of Haga, U.S. Patent No. 5,629,512. Claim 25 was rejected under 35 U.S.C. §103(a) as unpatentable over Empedocles et al., in view of Haga, and further in view of Rhoads, U.S. Patent No. 5,636,292. Claim 26 was rejected under 35 U.S.C. §103(a) as unpatentable over Empedocles et al., in view of Haga, and further in view of Sano et al., U.S. Patent Application Publication No. 2002001472.

Applicant has amended claims 1 and 2, canceled claim 25 and added new claims 34 and 35-40. To the extent that the above rejections may be applied to the pending claims, Applicant respectfully traverses the rejections and submits that the claims are allowable for the reasons set forth below.

Claim 1, as amended, is directed to a method for scanning articles each labeled with a label comprising a light polarizing material including the steps of: (1) exposing the light polarizing material to a light source, the light polarizing material being positioned over a reflective layer to form a machine readable indicia including a code associated with the article, (2) dividing light reflected from the indicia into a plurality of beams; (3) filtering at least a plurality of the beams through polarizing filters, each of the filters being offset from each of the other filters by a predetermined angle; (4) generating an electronic image from each of the filtered beams with a detector; (5) comparing the electronic images to produce a composite image corresponding to the machine readable indicia; and (6) electronically analyzing the composite

image to decode the indicia.

As noted in the Office Action, Empedocles et al. does not teach an article labeled with a light polarizing material. Empedocles et al. also does not teach, suggest or disclose a method wherein a label comprising a *light polarizing material* positioned over a *reflective material* to form a *machine readable indicia* including a code associated with the article is exposed to a light source and wherein light *reflected* from the indicia is divided into a plurality of beams.

Rather, Empedocles et al. discloses a method of labeling items with labels that generate identifiable spectra in response to excitation energy. The labels of Empedocles et al. are purported to be particularly suited to identification of small or fluid elements which may be difficult to label using known techniques. (Empedocles et al., ¶20-21, ¶ 68). Preferably the label comprises a semiconductor nanocrystal, typically a population of semiconductor nanocrystals wherein each semiconductor nanocrystal of each population generates a signal having an associated population wavelength in response to excitation energy. Empedocles et al. Empedocles et al., describes the emitted spectra as “spectral codes” (Empedocles et al. ¶49, Figures 2a-2e) and describes the emitted spectra as follows:

The present invention generally utilizes a spectral code comprising one or more signals from one or more markers. The markers may comprise semiconductor nanocrystals, with the different markers often taking the form of different particle size distributions of semiconductor nanocrystals having different signal generation characteristics. The combined markers define labels which can generate spectral codes, which are sometimes referred to as “spectral barcodes.” These spectral codes can be used to track the location of a particular item of interest or to identify a particular item of interest. (Empedocles et al., ¶72).

Empedocles et al. does not teach or disclose dividing light reflected from the indicia into a plurality of beams and filtering the beams through *polarizing* filters, each of which is offset

from each of the other filters by a predetermined angle. Rather, the portion of Empedocles cited in the Office action discloses filtering the beams through *band-pass* filters resulting in images that provide information about a discrete region of the spectrum. A polarizing filter blocks light waves vibrating at selected angles to the filter. A band-pass filter on the other hand, allows only a band of frequencies surrounding the cutoff frequency to pass through unaffected. Empedocles et al. also does *not* teach *comparing* the electronic images to produce a composite image. Rather, Empedocles et al. merely states that the “images are then projected onto a detector and the signals recombined to produce an image that contains information about the *amount of light within each band-pass*.” Further, since Empedocles et al. does not teach filtering the beams with a polarizing filter or comparing the electronic images to produce a composite image, it cannot be said that Empedocles et al. teaches electronically analyzing the composite image to decode the indicia.

Thus, Empedocles et al. does not teach, suggest or disclose “filtering at least a plurality of the beams through polarizing filters, each of the filters being offset from each of the other filters by a predetermined angle; generating an electronic image from each of the filtered beams with a detector; comparing the electronic images to produce a composite image corresponding to the machine readable indicia; and electronically analyzing the composite image to decode the indicia” as specified in claim 1.

Haga does not cure the deficiencies of Empedocles et al. Haga discloses a label formed from fluorescent material that is transparent to visible light and fluoresces when exposed to a light source other than visible light. (Haga, col. 3, lines 60-67). A light “modulating” layer is placed beneath the label to *prevent* the underlying layer from fluorescing or reflecting light that

could interfere with detection of the light emitted from the label. (Haga, col. 4, lines 24-46).

Haga teaches that when a polarizing film is used as the light modulating layer, the direction of polarization is perpendicular to the direction of polarization of a polarizing plate on the light incident side of the bar code reader so that light from the underlying layer *does not reach* the bar code reader:

The reflected light VR3' has only a light component in the polarizing direction of the polarizing film 62 as it is polarized by the polarizing film 62. Since this polarizing direction is perpendicular to the polarizing direction of the polarizing plate (analyzer) 68 arranged on the light-incident side of the bar code reading optical system 66, the reflected light VR3' is shielded by the polarizing plate (analyzer) 68 and *cannot reach the bar code reading optical system 66*. (Haga, col. 10, line 41 - col. 11, line 5, emphasis supplied).

Haga, does not teach a method of reading a label formed from a light polarizing material. Rather, Haga teaches the use of a polarizing material to keep reflected light from ever reaching the bar code reader to prevent interference with the light generated by a fluorescing label. Thus, Haga, fairly read, teaches *away* from the use of the light polarizing material positioned over a reflective layer to form a machine readable indicia as specified in claim 1.

Neither Empedocles et al. nor Haga, taken alone or in combination, teach, suggest or disclose a method wherein a label comprising a *light polarizing material* positioned over a *reflective material* to form a machine readable indicia including a code associated with the article is exposed to a light source and wherein light *reflected* from the indicia is divided into a plurality of beams. Neither Empedocles et al. nor Haga, taken alone or in combination, teach suggest or disclose filtering at least a plurality of the beams through polarizing filters, generating an electronic image from each of the filtered beams with a detector, comparing the electronic

images to produce a composite image corresponding to the machine readable indicia; and electronically analyzing the composite image to decode the indicia. Consequently, a *prima facie* case of obviousness has not been established. “To establish prima facie obviousness of a claimed invention, *all* the claim limitations must be taught or suggested by the prior art.” MPEP §2143.03 (emphasis added, citation omitted).

Further, even if the combination of Empedocles et al. with Haga taught all of the features specified in claim 1, (which it does not), there is no suggestion or motivation in Empedocles et al. or Haga to support the combination. Absent such suggestion or motivation, the combination is improper. “The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.” MPEP 2143.01. Applicant respectfully submits that the only possible manner in which Empedocles et al. could be combined with Haga is through the impermissible use of hindsight.

In view of the foregoing, Applicant respectfully submits that claim 1, as amended is allowable over the cited references.

Claim 2 specifies that a database including a plurality of codes is used to *apply* different machine readable indicia to different ones of the plurality of articles, the machine readable indicia representing one of the plurality of codes associated with particular articles. Paragraph 101 of Empedocles et al. not teach using a database to *apply* different machine readable indicia to different articles. Rather the reference indicates that a database may be used to *identify* the *spectra* of an element, an entirely different, totally unrelated operation. Consequently, Neither Empedocles et al. nor Haga, taken alone or in combination, teach, suggest or disclose the

combination of features recited in claims 1 and 2.

Applicant respectfully submits that dependent claims 3, 7, 9-10 and 27 are allowable for the reasons set forth in connection with claim 1.

In rejecting now-canceled claim 25, the Office action cited the Rhoads reference solely as disclosing the subtraction of digital images. Similarly, in the rejection of dependent claim 26, the Sano et al. reference was cited as teaching printing bar codes corresponding to zip codes and addresses on postal items. However, neither Rhoads nor SANO et al. cure the deficiencies of the underlying flawed combination of Empedocles et al. and Haga et al. Therefore, Applicant submits that claim 26 is allowable for the reasons set forth in connection with claim 1 above.

New claim 34 is directed to a method for scanning destination information from a series of mail pieces, each mail piece being labeled with a bar code formed from a light polarizing material comprising: (1) exposing the mail piece to a light source, such that light is reflected through the bar code from a reflective layer under the bar code; (2) dividing the reflected light into a plurality of beams; (3) filtering at least a plurality of the beams through polarizing filters, each of the filters being offset from each of the other filters by a predetermined angle; (4) generating an electronic image from each of the filtered beams with a detector; (5) comparing the electronic images to produce an image of the bar code; and (6) electronically analyzing the composite image to decode the bar code.

New independent claim 35 recites a method for scanning articles each labeled with a label including a light polarizing material, including the steps of conveying the articles past a light source to expose the light polarizing material to light, the light polarizing material being positioned over a reflective layer to form a machine readable indicia including a code associated


with the article. Claim 35 specifies dividing light reflected from the indicia into a plurality of beams, filtering at least a plurality of the beams through polarizing filters, each of the filters being offset from each of the other filters by a predetermined angle and generating an electronic image from each of the filtered beams with a detector. Claim 35 further specifies subtracting a first digitalized image from a second digitalized image to obtain a difference representing the machine readable indicia and electronically analyzing the composite image to decode the indicia.

Applicant respectfully submits that the cited references do not, taken alone or in combination teach, suggest or disclose the methods recited in new independent claims 34 and 35 and that new claims 34 and 35-40 are allowable over the art of record.

Applicant has made an earnest effort to place the case in condition for allowance. Favorable action and passage of the case to issue are respectfully requested.

It is believed that no additional fees are due. However, if this is incorrect, please charge any additional fee to Deposit Account No. 50-1588.

Respectfully submitted,



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